

REMARKS

Reconsideration and allowance of the above-identified Application in view of the following remarks are respectfully requested.

Claims 1-4 are pending in the Application.

Applicant amended claim 1 to remove the phrase “the steps of” so that this claim will not be misconstrued as reciting step-plus-function limitations, in which case it may be construed more narrowly than intended.

The Examiner rejected claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by Wang et al.(US 6,395,635). This rejection is respectfully traversed for at least the following reasons.

The present application relates to a method for planarizing a surface of a semiconductor wafer without causing scratches thereon by performing a water polishing process using water after a polishing process using slurry.

In contrast, Wang’s method planarizes the Inter Metal Dielectric (IMD) using a three step polishing sequence and a two step buffing procedure, wherein the three step polishing sequence consists of applying de-ionized (DI) water, an oxide slurry and DI water polishing; and the two step buffing procedure consists of applying an oxide slurry and DI water buffing. In other words, Wang’s planarizing method includes at least five steps which are three polishing steps and two buffing steps. Consequently, Wang discloses a totally different method from that of the present invention.

Further, the Examiner stated that Wang discloses depositing an insulator layer 26; performing a first polishing process while supplying slurry to the surface of the insulator (Col. 6, line 58); and performing a second polishing process while supplying water to the surface of the insulator layer (Col. 6, line 59). The Examiner further mentioned that even though Wang discloses a polishing process with water prior to the polishing process with slurry, it is a cleaning step before performing the polishing process with slurry.

However, just like the Examiner states that the polishing process with water prior to the polishing process with slurry is a cleaning step, the polishing process with water after the

polishing process with slurry is a cleaning step, also. As Wang discloses, the polishing process with water reduces the damascene residue. Accordingly, Wang's polishing process with water does not function as an actual polishing step, but is actually a type of cleaning step for reducing the damascene residue. Consequently, Applicant respectfully submits that Wang does not disclose a second polishing process while supplying water to the surface of the insulator layer; and therefore, claims 1 and 2 are not anticipated by Wang. Applicant thus requests that the rejection of claims 1 and 2 be withdrawn.

The Examiner rejected claims 3 and 4 under 35 U.S.C. 103(a) as being unpatentable over Wang as applied to claims 1 and 2, and further in view of Wang (2003/0003745). Applicant respectfully traverses for at least the following reasons.

Claims 3 and 4 depend from claim 1, either directly or indirectly, and are thus allowable for the same reasons indicated above in regard to claim 1.

In addition, claim 4 recites that about 80% thickness of a total polishing target of the insulator layer is removed by the first polishing process and the remainder of the insulator layer is polished by the second polishing process. In Wang's method, since the polishing process with water after the polishing process with slurry functions as a cleaning step, the polishing process with water only reduces the damascene residue and does not remove about 20% thickness of a total polishing target of the insulator layer.

CONCLUSION

Applicant believes that this is a full and complete response to the Office Action. For the reasons discussed above, applicant now respectfully submits that all of the pending claims are in complete condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn; and that claims 1-4 be allowed in their present form.

Should the Examiner require or consider it advisable that the specification, claims an/or drawings be further amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case be passed to issue.

LEE -- 10/743,454

Client/Matter: 021906-0307405

Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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